

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
25 September 2003 (25.09.2003)

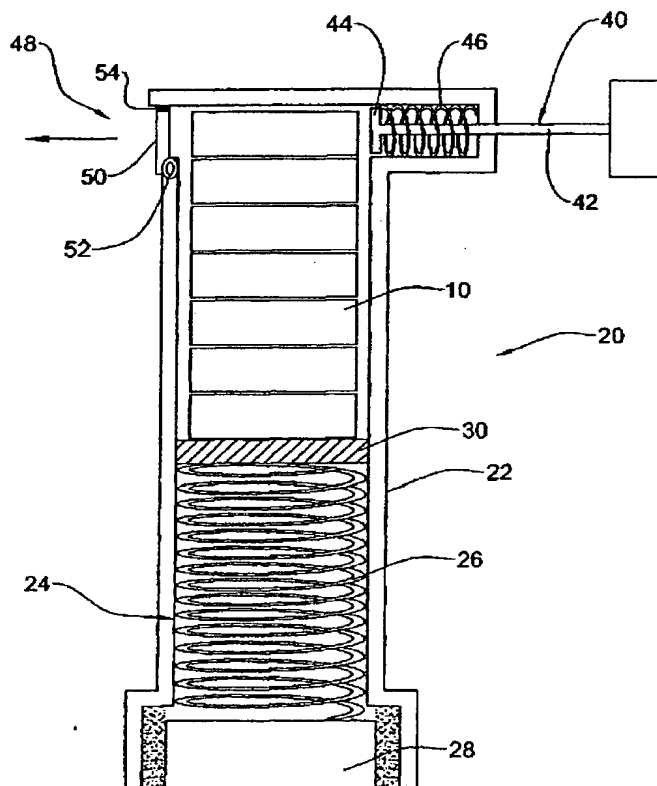
PCT

(10) International Publication Number
WO 03/077664 A1

- (51) International Patent Classification⁷: A23C 9/18 (74) Agent: REINHOLD COHN AND PARTNERS, P.O.Box 4060, 61040 Tel-Aviv (IL).
- (21) International Application Number: PCT/IL03/00247
- (22) International Filing Date: 20 March 2003 (20.03.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 60/365,522 20 March 2002 (20.03.2002) US
- (71) Applicants and
(72) Inventors: OZALVO, Karen [IL/IL]; 56 Yam-Hamelach Street, 55900 Ganey-Tiquva (IL). PALKOVITCH, Sigal [IL/IL]; 37 Yam-Hamelach Street, 55900 Ganey-Tiquva (IL).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: BABY FOOD, PREPARATION THEREOF AND KIT THEREFOR



(57) Abstract: A tablet comprising an integer multiple of a unit amount of baby food intended for the preparation of a standard unit volume of an infant formula meal for a baby, the integer multiple corresponding to the age and/or weight of the baby, and the standard unit volume being equal to, or constituting a fraction of, a standard meal for a baby of minimal age/weight, such that an integer multiple of the standard unit volumes can produce any standard meal for babies for which the meal is intended.

WO 03/077664 A1

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

BABY FOOD, PREPARATION THEREOF AND KIT THEREFOR

FIELD OF THE INVENTION

The present invention relates to baby food, and in particular, to baby food used in the preparation of an infant formula.

BACKGROUND OF THE INVENTION

5 Infant formula is usually suitable for feeding babies up to the age of about 2 years. The formula is typically prepared from a powder and is sold, for example, in containers such as cans or cartons of about 400 grams (14 oz) of powder. Such containers typically further contain a single serving spoon designed for the preparation of meals of a specific quantity for babies.

10 Such meals are prepared by scooping the powder from a container using the serving spoon included therein and then scraping over the top of the spoon with clean knife blade to remove excess powder to ensure that only integer multiple of spoonfuls are precisely measured and used. The powder is then added to a baby's bottle with an appropriate amount of water, closed within the bottle by a top having
15 a nipple, and the bottle is shaken until the powder is thoroughly dissolved.

Typical instructions for preparing a single feeding may appear on containers and comprise the following:

Pour lukewarm water in baby's bottle.

Scoop a spoonful of powder using the enclosed measuring spoon.

20 Scrape level with a clean knife blade.

Add one scoop of powder to each 60 ml of lukewarm water in feeding container (baby bottle).

- 2 -

Stir or shake until powder is completely dissolved.

Standard meals are normally prepared according to the age and weight of the baby (as may be advised by pediatric nutritional requirements) and are usually indicated in table-like form on the container.

5 One example of how such indications may appear is as follows:

Table 1:

Age of baby in months	Amount of water per meal	Spoonfuls (approx. 9 grams each)	Number of meals per day
0-3	60 ml	1	6-7
3-6	120 ml	2	5-6
6-9	180 ml	3	5
9-12	240 ml	4	4-5
12-15	300 ml	5	3

Preparation of a standard meal according to the above requires several tasks which often need to be performed while holding and/or looking after a hungry,
10 crying baby, sometimes in the middle of the night, when one is tired and patience and concentration are not at their optimal. Furthermore, the preparation process requires the use of two hands. Performing this process several times daily is difficult, complicated, and awkward, and even more so if preparation must be done for a number of children, who may be of different ages and therefore require
15 different amounts of formula.

Also, the above-described preparation method is not fully sanitary because once the container is opened, it is exposed to human hands, humidity, dust and air – and this is repeated each time the can is opened for every meal preparation thereafter.

20 Another disadvantage of the above-described product and process is the short shelf life of the formula powder from the moment the container is opened due to the considerable and frequent exposure to the various external elements such as those mentioned above. The formula powder typically has a shelf life of about two weeks from the day the container is opened. The opening of the container exposes

- 3 -

its entire contents i.e. the powdered formula to air and humidity until all of it is consumed, which can take a few days or a few weeks, depending on the feeding amounts, or until the conditions cause the powdered formula to spoil.

In addition the above drawbacks, preparation of infant formula with the
5 above product and process is often messy as a fair amount of powder often spills on the counter. This spilled powder is unused and therefore wasted, and additionally, requires clean up. Also, there often remains a small amount of powder in the container when the contents are near depletion, this amount not being enough for a single spoonful, or too difficult to remove, and therefore needing to be
10 unfortunately discarded.

By the above product and process, the common way to prepare bottles of infant formula to take when leaving the house requires either taking bottles with a measured water amount, and the whole container of infant formula, or preparing the formula by mixing the powdered formula at home with water and filling a bottle
15 (which is not recommended by formula manufacturers). These prepared bottles of formula are usually good for consumption for no more than one hour.

Alternatively, it is known to use a specially divided container, which has three slots for holding powdered formula and is designed for transporting the powder in the specified needed amounts for taking away from home. However, this
20 container is an additional product that must be purchased, and it also requires preliminary measuring and preparations before leaving the house. This container also easily spills when transported in a diaper bag, for example, and does not leave possibilities for any adjustments, changes or modularity of the meal, depending on baby's hunger and quantity needed. And, it is difficult and inconvenient to prepare
25 a formula meal outside of the house, for example when the exact amount of water needed for the amount of powdered formula taken along is not readily available, making meals impossible to modulate. Furthermore, it can be difficult to know what amount of powdered formula was taken; for example, whether 3 or 4 scoops was put in a particular compartment.

- 4 -

Known alternatives include packages with ready-to-feed cans, cartons or bottles having a prepared liquid meal, commonly used in hospitals, however these are relatively expensive and are only good for immediate use.

SUMMARY OF THE INVENTION

5 An object of the present invention is to eliminate the above drawbacks by providing baby food in a dissolvable tablet form for the preparation of infant formula.

The term *tablet* will be used hereinafter in the specification and claims to denote a distinct modular body of material in its broadest connotation and includes,
10 for example, capsules, cakes, blocks, ampoules, pellets and the like. These tablets can be provided in a variety of shapes including, for example, those that tend to facilitate dissolution thereof.

The present invention provides a tablet comprising baby food, and a method for the preparation of infant formula meal using this tablet, as well as a kit for
15 storage and/or dispensing of the tablets, wherein the tablet comprises an integer multiple of unit amounts of baby food.

Each unit amount of baby food is the amount appropriate to prepare a standard unit volume of infant formula, the standard unit volume defined as that volume for which a multiple thereof can provide any single "standard meal." The
20 term "standard meal" can be understood, by example, as indicated in Table I (e.g. for a baby of 4 months: 2 scoops, approximately 18 grams, of powdered formula in 120 ml of water).

Thus, a multiple of a standard unit volume may contain a quantity of baby food for the preparation of a "standard meal" for an infant of any predetermined
25 age/weight group and an integer multiple number of tablets can be used to prepare such "standard meal."

It is a further object of the present invention to provide baby food, for the preparation of infant formula, whether in or out of the house, in a form that is dry,

- 5 -

stable, accurate, convenient, quick and easy to use, the formula prepare-able in an orderly, thrifty and simple manner with one hand.

For facilitating this, a tabletted baby food may be supplied as part of a kit comprising a dispenser adapted to conveniently store and eject individual tablets
5 therefrom. The dispenser may be designed for one-time use or in a manner allowing repeated loading of tablets and thus repeated use of the dispenser.

Another object of the present invention is to provide an infant formula that can be prepared in a sanitary manner.

To this end, each tablet can be packed individually to maintain a sanitary
10 environment for the special needs of infants, which is especially important for premature babies who are susceptible to infection and diseases. The tablets may be packed with an airtight wrapper provided with an easy to open strip or a beginning tear, to facilitate sanitary removal of the wrapper immediately prior to use and with the ability to open with one hand, freeing the other hand to perform other tasks.
15 such as holding the baby. Alternately, a dispenser can be used wherein the dispenser is designed to store the tablets in a sealable manner to prevent contamination.

Infant formula prepared from tablets of baby food according to the present invention is suitable to the modern lifestyle and would ease the daily life of parents/care-takers and babies by simplifying and shortening the time of
20 preparation of feeding, thereby resulting in calmer babies and parents/care-takers.

BRIEF DESCRIPTION OF THE DRAWINGS

In order to understand the invention and to see how it may be carried out in practice, embodiments will now be described, by way of non-limiting examples only, *inter alia* with reference to accompanying Fig. 1 which is a
25 schematic illustration of one embodiment of a dispenser for dispensing baby food in tablet form according to the present invention.

- 6 -

DETAILED DESCRIPTION OF THE INVENTION

A baby food tablet according to the present invention is a solid, rigid, modular body of material and can be produced in a variety of shapes, as known *per se*.

5 The tablets are preferably made of a baby food material that is fast dissolving, typically powder, and may further be produced in geometry's facilitating the dissolution of the tablets, for example, by being formed in shapes with large surface-to-volume ratios. The tablets may also include, for example, micro-encapsulated additives, binders, etc.

10 The tablets are formulated and sized to replace the commonly known serving spoon associated with presently used containers of baby formula powder, with advantages of convenience and flexibility as mentioned above and as will become further apparent.

The tablet does this by containing a integer multiple of a unit amount of
15 powdered formula that may be used for the preparation of any "standard meal" of infant formula, or fraction thereof, in any age/weight infant group. In other words, a portion smaller than, equal to, or greater than a single "standard meal", for example one and a quarter meals, may be prepared. The quantity of food in a single "standard meal" can be understood, for example, from a table such as
20 Table 1, and generally relates to the age and/or weight of the baby.

By dissolving a predetermined number of tablets in a corresponding amount of water, or other appropriate liquid, infant formula may be prepared, for example, according to the following chart, wherein in this exemplary case, one tablet is equivalent to one half of one single "standard meal" (per Table 1) for an
25 infant of minimal age (0-3 months):

Table 2:

Age of baby in months	Amount of water per meal	No. of tablets
0-3	60 ml	2
3-6	120 ml	4

- 7 -

6-9	180 ml	6
9-12	240 ml	8
12-15	300 ml	10

and for example using the following instructions:

1. Pour lukewarm water, into a baby's bottle, in accordance with the baby's age as prescribed in the above chart,
- 5 2. Add to the bottle the appropriate number of tablets from a tablet container or dispenser as prescribed in the above chart,
3. Cap and shake the bottle until the tablet has completely dissolved.

Thus, although one tablet according to the present invention may be of a
10 quantity corresponding to one spoonful of known powdered infant formula to be added to each 60 ml of lukewarm water, this is not necessarily, or preferably, the case.

In fact, tablets may also be made for preparing quantities based on multiples of various smaller or larger infant formula volumes. For example, a
15 tablet comprising a unit amount of baby food for the preparation of a unit volume of 60 ml of infant formula may be used to prepare meals that would suit babies of all age/weight groups as indicated in Tables 1 and 2. Alternatively, the amount of baby food in a single tablet may be less, i.e. suitable for the preparation of a standard unit volume of, for example, 15 ml of baby formula, or more, depending
20 on the age/weight group to which the infant belongs. Thus, each tablet may contain an amount of baby food corresponding to a meal of 120 ml, which is suitable or babies in the 3-6 month age group, or may contain an amount of baby food corresponding to a meal of 180 ml, which is suitable or babies in the 6-9 month age group, etc., whereby a single tablet, or multiples thereof, can be used
25 to modularly prepare any desired formula meal.

For clarity, another example is provided in which: 4 tablets, each tablet comprising 4.5 grams of powder (see Table 1) and comprising a quantity of baby

- 8 -

food to prepare 2 standard unit volumes of 60 ml each, would appropriately be dissolved in 120 ml of water to produce infant formula for a baby of 3-6 months.

Thus, flexibility and easy measurement is enabled for controlling and preparing the quantity of a feeding according to a baby's needs and hunger for a
5 larger or smaller amount of infant formula.

It can thus be understood that by use of this invention, there will not be special efforts needed in preparations of a baby's meal prior to leaving the house with an infant, i.e. no measurements, no mess, no auxiliary equipment (e.g. partitioned compartment, powder leveling instrument, etc.). The tablets are very
10 practical, simple and convenient to use – whether at home or outside the home.

Fig. 1 illustrates an example of a dispenser 20 for individually dispensing a plurality of tablets 10.

The dispenser 20 comprises a housing 22 within which a spring assembly 24 resides. The spring assembly 24 is composed of a spring 26 (biased to put
15 pressure on the tablets 10), a plug 28 at one end thereof, and a top plate 30 at the other end, adjacent to the tablets 10, to provide an appropriate surface for the tablets to rest upon. The plug 28 is fixed at one end of the dispenser 20 by any of known means such as by a snap fit, threaded mechanism, etc. It is preferable that the plug 28 be attached to the spring 26 and the spring attached to the top plate
20 30 for convenient removal of the assembly 24 to facilitate re-supplying tablets 10 into the dispenser 20.

Alternatively, the plug 28 can be designed to be non-removably fixed in the end of the housing 22, as consistent with one-time use of the dispenser 20.

Also shown is an ejector mechanism 40 comprising a plunger 42 with a
25 plate 44, and a spring 46. The spring 46 is biased so as to keep the plunger 42 in the retracted position (as shown in the figure) and, when it is depressed, the plate 44 pushes against the tablet 10 adjacent the plate thereby ejecting the tablet from the dispenser 20 via an exit 48.

To prevent contamination of the tablets 10 when in the dispenser, the exit
30 48 can comprise a mechanism for automatically closing the exit after one or more

- 9 -

tablets have been ejected. The mechanism can comprise, for example, an exit flap 50 biased in the closed position by a spring 52 and having a seal member 54 for sealing the exit. Thus, the tablets 10 need not be wrapped and the step of unwrapping them would thereby be obviated.

- 5 It should be understood that there are a variety of dispenser designs that are capable of providing for the convenient storage and dispensing of tablets, one additional example being those comprising a top that upon spinning will eject a tablet or pellet.

- The tablets 10 may also be packaged individually and sold individually.
- 10 Their packaging may have an easy to open strip (not shown) or beginning tear to facilitate opening with one hand. The tablets 10 may also each be individually covered by such packaging in a container containing a plurality of tablets – for example like an ice-cube tray with a sealable and peelable covering. The individual packaging ensures that the tablets 10 would not be exposed to air and
- 15 humidity, thus preventing them from spoiling. This allows for an extended shelf life and would allow users to keep the product for a longer time from the opening date.

- The tablets 10 provide for increased accuracy and precision in meal preparation since each tablet contains an exact amount of baby food for
- 20 dissolving in a measured amount of water. Accuracy and precision of meal size are important elements in a baby's nourishment, especially as the baby may be fed with infant formula solely, up to about 6 months, or mainly, until it is several months of age. Each tablet 10 contains a specific and accurate amount of powder/food, corresponding for example to the quantities understood from Table
- 25 2. Therefore each meal would be prepared with the proper amount of powder and water whereby the infant formula would be accurate in its food content and concentration.

The composition of the tablets 10 is not limited and the tablets can be produced from any known ingredients for baby food which is amenable to tablet

- 10 -

form having known nutritional components, including any additives appropriate for forming of the tablets, if necessary.

The tablets 10 according to the present invention can be made in different versions, needs and variations for infants, and with an ability for adjustment according to a baby's sensitivities, health or digestion problems, such as constipation, gas, and the like. The tablets 10 may also be made with added materials, vitamins, or with other supplements, flavoring, etc. Each tablet 10 may be a so-called "2 in 1" tablet and contain several main ingredients such as formula, cornflower or milk and porridge and for this purpose may also be made in several layers. The tablets 10 can be modified for different needs and preferences to be made from, for example, soymilk, cow's milk, or sheep's milk. They may also vary in content, shape, size and color. Tablets of larger or smaller sizes may be packaged and sold together for babies of a certain age group, where, for example, a container is sold having many large tablets for diluting in 240 ml of water strictly for preparing large meals specifically intended for older babies, such as 12 months old. However, the tablets should typically be sized so as to fit in a standard feeding container (baby bottle).

Alternatively, assorted containers of tablets having various sizes may be sold with the size, and therefore volume of the meal to be prepared therewith, corresponding to various ages and/or weights of babies. Each of the various sized tablets in these assorted containers may be individually packaged, with, for example, the age/weight of the baby and/or the tablet dosage/volume of meal to be prepared, being suitably marked or indicated, such as by writing or by a specific color, on the packaging. The latter option is particularly suitable for parents or caretakers having many babies of various ages and/or weights to feed.

The following is an example of an experimental procedure for producing tablets according to the present invention:

Powdered infant milk formula of the type "Enfamil premature powder" produced by Mead Johnson, which is intended for the feeding of premature

- 11 -

infants and uses powdered milk as its basis was used as the powder for producing tablets.

Powder samples were formed into tablets of approximately 2 grams by compressing under a weight of 0.25 tons in a press machine. The sample size of 2
5 grams was chosen due to the size of the press at hand and not due to any other limitations.

The compressed powder resulted in the formation of stable tablets that kept their form even after being exposed to shaking/jostling and these tablets readily dissolved in lukewarm water.

10 It should be understood that there are a various tableting methods, machines and processes that can produce appropriate tablets – and these tablets can be produced from various infant formula brands and compositions.

For example, the tablets can be pressed in a manner similar to that described in the above example, but with additives known to facilitate tableting,
15 such as binders; or formula powder can be coated or encapsulated to form tablet-like bodies or produced in capsule form, etc.

The above embodiments are merely exemplary and a baby food tablet, method for preparation of a liquid meal for an infant using these tablets and an associated kit therefor, can be embodied in a variety of aspects falling within the
20 scope of the present invention, as will be understood by those skilled in the art.

CLAIMS:

1. A tablet comprising a integer multiple of a unit amount of baby food intended for the preparation of a standard unit volume of an infant formula meal for a baby,
5 said integer multiple corresponding to the age and/or weight of the baby, and said standard unit volume being equal to, or constituting a fraction of, a standard meal for a baby of minimal age/weight, such that an integer multiple of the standard unit volumes can produce any standard meal for babies for which the meal is intended.
2. The tablet according to claim 1, wherein the tablet comprises one unit amount
10 of baby food.
3. The tablet according to claim 1, wherein the unit amount is a fraction of a single standard meal for a baby of any given age and/or weight.
4. The tablet according to any of claims 1 to 3, wherein said standard unit volume is one of the group comprising: 15 ml, 30 ml, 60 ml and any combination
15 thereof.
5. The tablet according to claim 1, wherein the unit amount is a equal to a standard sized meal for a baby of a minimum age and/or weight.
6. The tablet according to claim 1, wherein each tablet is individually wrapped.
7. The tablet according to claim 1, wherein each tablet is dispensable one at a
20 time from a dispenser.
8. The tablet according to claim 7, wherein each dispensable tablet is immediately ready for mixing with a liquid for preparing the infant formula.
9. A method for the preparation of a liquid meal from food for a baby of a known age and/or weight, said meal containing an integer multiple of a standard
25 unit volume, each volume prepared from a unit amount of said food, the method comprising:
 - i) providing said food in the form of one or more tablets according to any of claims 1 to 8; and

- 13 -

ii) introducing said one or more tablets into a container suitable for feeding a baby, the container holding an appropriate liquid and quantity thereof, such that the said one or more tablets dissolve in said liquid.

10. A kit for the storage and/or dispensing of baby food comprising a dispenser
5 for dispensing the food according to any one of claims 1 to 8.

11. A package of baby food according to any one of claims 1 to 8, comprising a plurality of tablets.

12. A package of baby food according to any one of claim 10, wherein the tablets are individually wrapped.

1/1

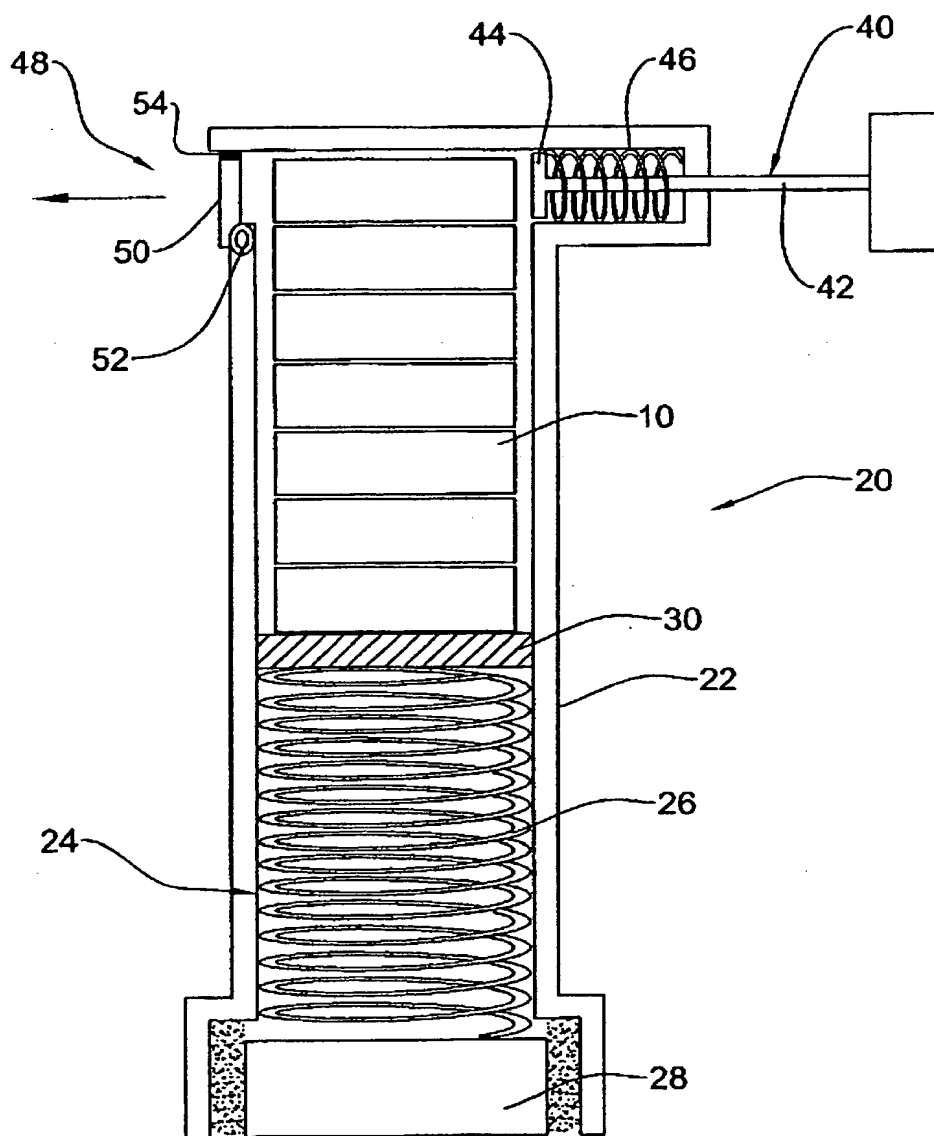


FIG. 1

INTERNATIONAL SEARCH REPORT

PCT/IL 03/00247

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A23C9/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A23C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

WPI Data, PAJ, EPO-Internal, FSTA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 911 522 A (LAGORCE GEORGES) 10 July 1946 (1946-07-10)	1-6,9
Y	page 2, column 1; claims 1-3	7,8,11, 12
Y	FR 1 176 328 A (JUSOT CLAUDIUS) 9 April 1959 (1959-04-09) page 1, column 1	7,8
Y	DE 299 08 880 U (FRANK ;KUEHL (DE)) 29 July 1999 (1999-07-29) column 4, paragraph 1 - paragraph 5; claim 1	7,8
Y	NL 1 524 C (BLOCKMILK PATENTVERWERTUNGS-GESELLSCHAFT) page 2, column 1	11,12
	--- -/-- ---	

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

g document member of the same patent family

Date of the actual completion of the international search

8 July 2003

Date of mailing of the international search report

15/07/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5618 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Desmedt, G

INTERNATIONAL SEARCH REPORT

PCT/IL 03/00247

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT			4
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 04, 31 March 1998 (1998-03-31) -& JP 09 328173 A (SEVEN KAGAKU:KK;KAMAYA KAGAKU KOGYO CO LTD), 22 December 1997 (1997-12-22) abstract; figure 1	1,2,4,5, 9	
A	FR 1 506 545 A (DUJAC MARCEL PANIE) 22 December 1967 (1967-12-22) the whole document	1,2,4,6	

Form PCT/ISA/210 (continuation of second sheet) (July 1992)

page 2 of 2

INTERNATIONAL SEARCH REPORT

Information on patent family members

PCT/IL 03/00247

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 911522	A	10-07-1946	NONE	
FR 1176328	A	09-04-1959	NONE	
DE 29908880	U	29-07-1999	DE 29908880 U1	29-07-1999
NL 1524	C		NONE	
JP 09328173	A	22-12-1997	NONE	
FR 1506545	A	22-12-1967	NONE	

Form PCT/ISA/210 (patent family annex) (July 1992)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.